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A Faceted Materials Budget Implementation Guide for Academic Libraries

Maria Savova

The Claremont Colleges

Jason S. Price

Statewide California Electronic Library Consortium (SCELC)

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A Faceted Materials Budget Implementation Guide for Academic Libraries

A companion to *Redesigning the Academic Library Materials Budget for the Digital Age: Applying the Power of Faceted Classification to Acquisitions Fund Management*

Maria Savova, Director of Scholarly Information Resources, The Claremont Colleges Library

Jason Price, PhD, Director of Licensing Operations, SCEL Library Consortium

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This implementation guide is an integral part of *Redesigning the Academic Library Materials Budget for the Digital Age: Applying the Power of Faceted Classification to Acquisitions Fund Management*. It provides a step-by-step description of the redesign process from a traditional hierarchical budget to a multidimensional faceted budget schema. Detailed examples from The Claremont Colleges Library (The CCL) illustrate one possible practical implementation of the schema and explain the reasoning behind some of the decisions we made. This guide also includes insights into the operational use of the schema in allocating acquisitions funding, producing reports, and projecting future needs for library budget requests.

Sample figures produced from the restructured budget and created for librarian, faculty, and university administrator audiences provide examples of the efficacy of the new structure. These figures and tables provide ready examples of answers that (1) elucidate how library funds are spent, (2) predict end of year actuals throughout the year, and (3) demonstrate the effect of the current budget scenario on future library purchasing power.

This implementation guide organizes the redesign and operationalization process into three stages:

- I. Redesigning the budget structure based on the faceted schema
- II. Operationalizing the budget under the faceted schema
- III. Monitoring, reporting, and projecting

Stage I: Redesigning the budget structure based on the faceted schema

Step 1: Identifying and adopting the appropriate facets

The CCL elected to employ a four-dimensional faceted schema to accommodate four essential aspects of library expenditure: **(a) material format**, **(b) material type**, **(c) acquisition mode**, and **(d) cost center**. Although some libraries may not need to include all four of these facets, we expect them to be necessary and sufficient for most libraries. Note, however, that faceted schemas allow for expansion with additional facets as needed. For example, a funding source facet could be valuable to institutions who wish to distinguish their accounting lines as institutional appropriations vs. endowments and gifts vs. departmental funding; or by operational vs. capital funding, etc.

Step 2: Creating an exhaustive and mutually exclusive list of attributes for each facet.

a) Material format facet and its attributes

The CCL adopted two formats - **p** (print/physical - to include printed textual items as well as physical carriers like DVDs, CDs, etc.) and **e** (electronic).

b) Material type facet and its attributes

The CCL divided its material types into four groups - **b** (books), **j** (journals & journal databases), **m** (media/audiovisual), and **n** (non-journal content - primary sources, including newspapers and datasets). We chose to separate journal-related content into its own category due to its unique role in research and teaching, as well as the requirement to report these resources separately in annual library surveys.

c) Acquisition mode facet and its attributes

The CCL's acquisition mode categories include **o** (ongoing commitments), **s** (standing orders), **a** (approval plan autoship), **d** (demand-driven acquisitions), and **f** (firm order purchases).

d) Cost center facet and its attributes

The CCL defined its cost centers to be the library's already existing discipline and administrative groups as follows: AH (Arts and Humanities), SS (Social Sciences), ST (Science, Technology, Engineering, and Math), MD (Multidisciplinary), SC (Special Collections), and AS (Asian Studies). The library had accomplished this a few years prior to the redesign by consolidating individual subject funds into the larger discipline ones.

The multidisciplinary cost center is used only for resources that truly cannot be meaningfully allocated to the disciplinary cost centers, which is the case for some reference, A/V media resources, or general newspaper content, for example. Any resources comprised of content that can be allocated to multiple specific disciplines are allocated to the appropriate discipline funds according to the proportion of the cost or amount of content in them pertaining to each discipline. For example, a JSTOR Arts and Sciences collection might be allocated with a percentage to the Humanities and a percentage to the Social Sciences based on the list price or number of the journals from the respective disciplines. This additional effort is worthwhile in that it maximizes the portion of funding that is associated with specific disciplines, which increases transparency about how the money is being spent.

Technically, Asian Studies could have been folded into Arts and Humanities, but since the unit is administratively separate and academically significant, with its own location in the building for staff and collections, we chose to retain separate funding for their information resources. Special Collections is also an administrative division rather than a "discipline", and for the purpose of the budget structure it forms a separate fiscal administrative unit on par with AH, SS, and ST in importance, even if not in size. These two examples illustrate the flexibility to choose cost centers that are meaningful for each library's situation.

As is evident from the above lists, The CCL gave each cost center a unique two letter code, along with a unique one letter code to each material type, format, and acquisition mode. We found letters to be easier to remember and reproduce, but any numeric or alphanumeric combination would work.

Step 3: Creating combinations of the attributes from each facet to form and identify the list of meaningful fund codes

We set the order in which the different aspects appear in the fund code to: (1) cost center, (2) material type, (3) acquisition mode, (4) format. There is no special significance in the order, except perhaps that it is easiest to sort funds by the aspect that appears first.

By examining every *possible* combination of the above mentioned attributes, The CCL came up with the most exhaustive list of all *meaningful* fund codes that can exist per cost center. Furthermore, not every meaningful fund code would be *useful* in every cost center or in every library.

Note that “xx” replaces the cost center code for the purpose of this mapping exercise:

- a) Books (xxb__). Within the book material type the following *acquisition modes* and *formats* are meaningful:
 - i) typically only electronic books can be ongoing - e.g.. a subscription to an e-book collection - xxboe; (though potentially the rare case of rented popular collections of print books could be assigned their own ongoing print book fund - xxbop)
 - ii) books can be print or electronic standing orders - xxbsp and xxbse;
 - iii) both print and e-books can arrive on autoship (if the approval profile allows for “e-book autoship”) - xxbap and xxbae;
 - iv) both print and e-books can be purchased on demand - xxbdp and xxbde;
 - v) both print and e-books can be firm ordered - xxbfp and xxbfe.
- b) Journals (xxj__). Within journals we have fewer options:
 - i) both print and electronic journals can be ongoing - xxjop and xxjoe;
 - ii) one-time e-journal archive purchases could be triggered by faculty request and the library might choose to track those separately under an on-demand fund. In addition, demand-driven purchasing of individual articles (i.e. pay-per-view and similar services), is done regularly by academic libraries and is typically charged on ILL funds. If considered significant enough to be tracked separately, under this schema it should be assigned the fund xxjde;
 - iii) electronic journal archives can be acquired as one-time purchases through librarian selection - xxjfe.

- c) Media (xxm__)
- i) electronic media can be ongoing subscriptions - xxmoe;
 - ii) if the library has an approval plan including physical media - xxmap;
 - iii) both physical and electronic media can be purchased on demand - DDA for streaming video - xxmde - or purchase of DVDs or CDs on user request - xxmdp;
 - iv) and of course both electronic and physical media can be firm ordered - xxmfp and xxmfe
- d) Non-journal content (xxn__)
- i) can be ongoing - xxnoe;
 - ii) or one-time purchases (librarian selection) - xxnfe
 - iii) one-time non-journal content purchases could be triggered by user request and the library might choose to track those separately under an on-demand fund - xxnde.

Table 1. List of meaningful fund codes per cost center

Fund	Material type	Acquisition mode	Material format
xxbop	book	ongoing	print
xxboe	book	ongoing	electronic
xxbsp	book	standing order	print
xxbse	book	standing order	electronic
xxbap	book	approval	print
xxbae	book	approval	electronic
xxbdp	book	demand	print
xxbde	book	demand	electronic
xxbfp	book	firm	print
xxbfe	book	firm	electronic
xxjop	journals (and jdbs)	ongoing	print
xxjoe	journals (and jdbs)	ongoing	electronic
xxjde	journals (and jdbs)	demand	electronic
xxjfe	journals (and jdbs)	firm	electronic
xxmoe	media	ongoing	electronic
xxmap	media	approval	physical
xxmdp	media	demand	physical
xxmde	media	demand	electronic
xxmfp	media	firm	physical
xxmfe	media	firm	electronic
xxnoe	non-journal	ongoing	electronic
xxnfe	non-journal	firm	electronic

[Table 1 here]

Step 4: Distilling the list of meaningful fund codes to identify the useful set for your individual library (and each specific cost center)

Not every cost center acquires all meaningful resource types. At The CCL for example, e-book approval is not used at all and Special Collections does not acquire any content in electronic format. The Asian Library Cost Center also operates with a reduced set of fund codes. The total number of funds used in The CCL under the faceted structure is only 69, out of 126 meaningful combinations (22 per cost center x 6 cost centers).

Stage II: Operationalizing the budget based on the faceted schema

Step 5: Assigning existing and future orders to the new funds

Mapping resources to the new funds includes assigning new fund codes to all existing ongoing or standing orders and making decisions and training staff to use the correct fund code for future orders.

In some cases, old accounts translate directly into new ones. For example - all the existing print standing orders can likely be converted into xxbsp - standing orders for print books. Similarly, if the traditional journal (or serials) funds were only used for print journal subscriptions in the recent past (since the e-journals were charged on e-resources accounts), all ongoing orders on those accounts would be assigned to xxjop - journal ongoing print.

In other cases, materials formerly purchased on a single old account must now be distributed to multiple new ones. In the simplest case, the old media fund might map directly to physical media and the allocation would just be divided between firm and on-demand purchasing, as appropriate. In a more complex case, former book fund purchases might now be paid on as many as six different accounts - firm, approval, and on-demand for print book purchases, as well as firm, approval, and on-demand for e-books.

The expenditures charged on the electronic resources fund require the most thorough analysis in order to disentangle the mix of orders previously intermingled there. The only reliable way to accurately convert each order and dismantle the e-resources fund is a line-by-line review of each individual order-- be it ongoing, standing, or one-time purchase-- charged on that fund and assigning the appropriate new fund(s) at that time. This time-consuming one-time process is crucial for allocation and prediction, and represents the bulk of the work that is necessary to transform the former budget. At The CCL, we used the opportunity to perform a subscription review at the same time, which allowed us to cancel some duplicate and low-use subscriptions. Ideally, the “translation” process should be started well in advance of the FY end, leaving time to perform the process and be ready for the transition before the next year’s budget needs to be allocated.

The following outline provides a list of all the accounts The CCL used when dismantling its electronic resources funds:

- a) Ongoing (existing orders)
 - i) xxboe - subscriptions to e-book collections as well as hosting or platform fees for one-time purchase of e-book packages - previously these would have been charged on either the e-resources or book funds
 - ii) xxjoe - subscriptions to e-journals and journal databases, including individual journals and big deals, and hosting or maintenance fees for journal archives
 - iii) xxmoe - subscriptions to streaming audio and video, and other types of electronic media
 - iv) xxnoe - subscriptions to databases of all types of non-journal and non-ebook electronic content - e.g. business or statistical data, digitized primary sources, e-newspapers, etc.
- b) Standing orders (existing orders)
 - i) xxbse - standing orders for e-books - previously these would have been charged on either e-resources or book funds
- c) Approval (existing orders)
 - i) xxbae - approval plan “autoship” for e-book - previously these would have been charged on either e-resources or book funds
- d) Demand (future orders)
 - i) xxbde - charges from unmediated e-book demand-driven acquisitions program, as well as any individual purchases of e-books requested by a patron
 - ii) xxmde - DDA/PDA for streaming video or other types of electronic media, as well as licensing of individual electronic videos or other e-media on user request
- e) Firm (future orders)
 - i) xxbfe - all individual e-book purchases, as well as e-book packages, selected by library staff
 - ii) xxjfe - one-time journal purchases, like archives and individual article purchases
 - iii) xxmfe - purchase/licensing of streaming audio, video, or other electronic media
 - iv) xxnfe - one-time non-journal content purchases like datasets, primary source collections, or newspaper archives

Step 6: “Translating” past acquisitions expenditures data from previous years into the faceted format

A major strength of this schema is that it supports an evidence-based budget planning. In the transition period, however, the data needed to accurately project and allocate the available funding across the new categories needs to be “translated” conceptually into the terms of the faceted schema, before it can be used to extrapolate the next fiscal year’s (FY) allocations.

Following the mapping from step 5 above, rerun the last FY's budget report under the new schema. Some additional work may be needed to separate specific groups of expenditures. For example, past expenditures on the approval plans can be calculated from reports provided by the approval vendor, as needed. Ideally, the library should be able to estimate with relative accuracy the percentage of the book funds that were spent on e-books. The remapping of the e-resources fund re-grouped expenses by acquisition mode, material format, and material type, so that they are now ready to be analyzed in the faceted schema.

Once the annual expenditure report is produced with the old FY data in the new structure, it can be used as the basis for the next year's allocation.

Step 7: Establishing the initial allocation across the new funds in the transition fiscal year

a) General allocation principles

There are several core principles which guide the allocation process:

- Any cancellation decisions made after the initial allocation and before the amount is spent for the FY should be tracked and recorded, in order for the savings to be taken into consideration at the reporting stage, as well as in the next year's allocation. If possible, they should be formally or informally re-allocated into a discretionary fund (i.e. firm orders), so that they can be spent.
- Similarly, all new ongoing commitments added during the FY should be charged on the corresponding *firm order* fund (e.g. a new e-journal subscription in ST would be paid on stjfe in the first fiscal year). This practice is important for several reasons:
 - it avoids controllable overspending of the ongoing funds
 - it helps to keep the ongoing funds consistent from beginning of the FY to year-end
 - along with tracking and deducting cancellations at the reporting stage, it prevents skewing the overall percentage increase calculations due to comparing different groups of resources or prorated first year costs
 - last, but not least - it helps library staff and stakeholders be acutely aware of the effect of adding new ongoing resources, since it directly represents an important event: the transformation of discretionary funds into non-discretionary ones
- When making one-time electronic purchases on the firm (or on-demand) electronic journal and non-journal funds (xxjfe/xxjde and xxnfe/xxnde), it is important to remember that these sometimes come with an ongoing component (usually called a *platform*, *access*, *hosting*, or *maintenance* fee). Such fees often do not start in the first year, so when purchasing the resource,

the purchase amount should be charged on the appropriate firm journal or non-journal fund, but the ongoing amount needs to be added to the commitments in the corresponding ongoing fund for the next fiscal year.

b) Division among Cost Centers

There is a large body of literature devoted to subject allocation formulas and factors to consider when creating and applying them. With the faceted schema, libraries can continue using their preferred method to assign the percentage of the total or incoming budget to each subject area and use the underlying data to group these amounts in the newly-created larger cost center buckets.

At The CCL, the preferred annual budgeting method is a form of incremental budgeting. This method adjusts the preceding periods' allocations with the overall funding increases/decreases of the total budget. If using this method in the transition year, the incrementally indexed old subject-based cost centers should be grouped into the newly-formed larger discipline ones.

If the library used just one overall e-resources fund, that amount will need to be split between cost centers too, based on the order-by-order review data. Ultimately, after this step, the library should have the whole budget split among the new cost centers either based on a subject allocation formula or the previous year's allocation (Fig. 1).

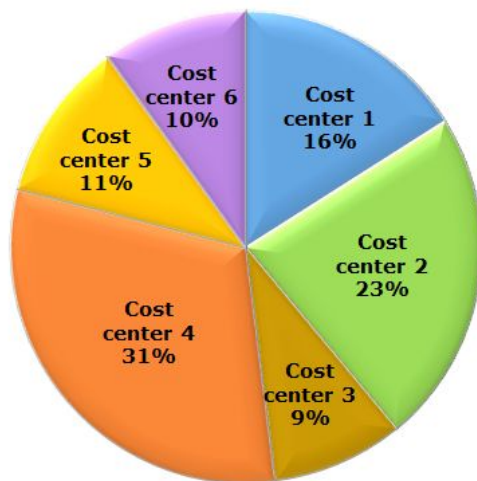


Figure 1. Distribution of acquisitions funding by Cost center

The next step is to allocate every individual fund within each cost center by *acquisition mode*, starting from the category with the least discretion (i.e. ongoing), and proceeding to the one with the most discretion (i.e. firm ordering).

c) Allocating by acquisition mode

i) *Allocating for ongoing orders:*

xxjoe - ongoing e-journals and journal database funds

Begin with the ongoing e-journals fund (xxjoe) - based on the list of ongoing orders that are being renewed, and ongoing amounts for any new subscriptions started during the previous fiscal year, as well as any ongoing access fees for one-time purchases. Allocate as precisely as possible the amount that will be automatically spent, without adding any intentional surplus.

The most precise approach is to calculate the specific allocation for every subscription based on historical data and/or multiyear contracts. This method might be impractical for big libraries with very long lists of subscriptions. In that case, or if the historical data is lacking, the amount can be calculated by increasing the previous year's total expenditure on these orders with an overall percentage increase for e-journal subscriptions, which in the first year might have to be a best estimate or an industry average. If the library has data regarding the overall increase of their particular set of subscriptions over the previous few years, it is best to use that.

As explained above, any new subscriptions for ongoing journal content should be charged on the firm journal fund (xxjfe) in the current year and allocated in the ongoing fund for the following fiscal year.

xxnoe - ongoing non-journal content funds

As with journals, when allocating for non-journal content, the first amount to be set aside would be for ongoing subscriptions. New additions from the previous year as well as any cancellations should be factored in. Once the allocation is final, no new ongoing orders should be added for the reasons described above.

xxboe - ongoing e-book subscriptions

The amounts dedicated to e-book subscriptions would need to be set aside early on, since they represent ongoing commitments. The fund's allocation should be based on the previous year's expenditure on the corresponding orders, indexed with the expected increases in subscription costs, without any intentional surplus. Ongoing platform or maintenance fees for purchased e-books or e-book collections, as well as the amounts for new subscriptions started during the previous fiscal year need to be added to the allocation as well. Any new e-book

subscriptions started during the fiscal year should be charged on a firm order fund and transferred and allocated as ongoing in the following FY.

xxmoe - ongoing e-media subscriptions

Allocating for streaming audio or video follows the same logic - allocation needs to be based on the previous year's expenditure from existing orders, indexed with the expected increases in subscription costs, without any intentional surplus. Ongoing platform or maintenance fees for purchased media collections, as well as the amounts for new subscriptions started during the previous fiscal year need to be added to the allocation.

ii) *Allocating for standing orders:*

xxbsp and xxbse - standing orders for print and e-books

Even though each volume of a standing order is a one-time purchase, the commitment to the series is ongoing and the allocation of this fund can be predicted using incremental increase on the previous year's expenditures for standing orders. The fund should be allocated as close as possible to spend itself, without any intentional surplus. Similarly to a subscription, new books purchased as part of starting a series mid-FY should be charged on a firm order fund and the standing order transferred and allocated to xxbsx as of the following FY. Since the publishing rate of book series varies widely both among and within standing orders, these funds need to be monitored in order to either spend unexpected surplus or curb firm ordering in order to cover overspending.

iii) *Allocating for approval plan autoship:*

xxbap and xxbae - approval plan autoship for print and e-books

Allocation for approval plan spending can be done on incremental basis using the previous year's expenditures, which can be obtained through vendor reports, by factoring in the industry average percentage increase for books. As long as the library has not made changes to the approval plan, the future spending should be predictable within a close margin. The fund should be allocated as close as possible to spend itself, without any intentional surplus. However, due to variations in publishing output, as well as any intentional changes to the plan mid-year, these accounts need to be monitored in order to either spend unexpected surplus or curb firm ordering in order to cover overspending.

iv) *Allocating the on-demand and discretionary part of the budget:*

Once all ongoing, standing orders, and autoship money is sequestered, the remainder of the budget appropriation can be allocated to the on-demand and firm order funds by material type and format. At this point the library might want to make a decision on how to split the remaining amount between the different material types and formats based on purchasing history from previous years, or could take the opportunity to strategically balance the allocations, as appropriate.

xxbdp and xxbde - on-demand purchasing for print books and e-books

On demand purchasing can be unmediated or mediated. The unmediated DDA services are often based on a profile that keeps expected expenditures within a range that the library can predict and plan for. Mediated on-demand purchasing is more easily controllable, but in either case setting a target is advisable. The target can be set as a firm amount (strategically or incrementally relative to the previous year's expenditure) or as a percentage of the total book money available after the non-discretionary acquisition modes have been allocated. Some libraries might even choose to have separate funds for mediated and unmediated demand-driven acquisitions. These accounts need to be closely monitored in order to either spend unexpected surplus or curb firm ordering in order to cover overspending.

xxbjp and xxbjfe - firm orders for print books and e-books

The amounts for firm ordering will be allocated from the remaining money, after the subscription, standing order, and on-demand money has been sequestered. Alternatively, the discretionary money could be strategically split between on-demand and firm orders. However, as already mentioned, the expenditures on all other categories, especially within books, could vary due to factors beyond the library's control. Ideally, acquisition modes within each cost center and material type will function as "interconnected vessels" (see Fig. 2): librarians will need to adjust their firm order spending to compensate for any unexpected underspending or overspending in any of the other acquisition modes. Close monitoring of these funds is essential for good management and should be a primary focus of the budget manager(s).

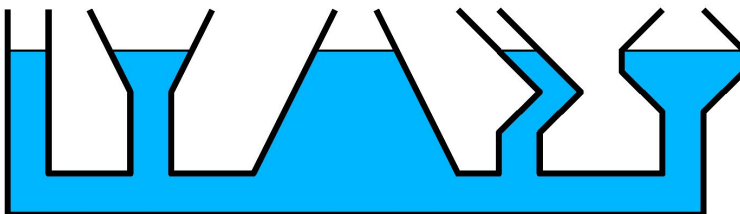


Figure 2. Connected vessels -

http://commons.wikimedia.org/wiki/File%3ACommunicating_vessels.png

xxjfe - firm e-journal and e-journal database funds

Once the non-discretionary funds are allocated, part of the remainder should be designated for journal firm order purchases. The exact amount could be calculated based on historical spending for this type of content or strategically. This fund plays multiple roles:

- It is the amount that can be spent on one-time purchases of journal backfile content;
- It serves as a cushion to cover for unexpected increases in the current subscriptions, as well as to compensate for the gap between budget increases and actual inflation on ongoing resources in the long run;
- It is the fund that should be used to pay the first year's subscription charge for newly added orders, as explained above.

If the library elects to have a separate fund for article pay-per-view - xxjde - and considers this to be demand-driven purchasing in journals, the amount allocated for that service would be split from the journal firm fund too.

xxnfe - firm orders of non-journal content

As with journals, the firm non-journal fund can be used to purchase one-time non-journal resources, e.g. datasets or primary sources - and any ongoing components of these outright purchases need to be recorded and added to the ongoing commitments in the xxnoe as of the following FY. The exact amount could be calculated based on historical spending for this type of content or strategically. The same logic is applied to using this fund as a cushion to correct overspending or absorb allocated surplus, if any, from ongoing non-journal content. Any new subscriptions for ongoing non-journal content should be charged on the firm order fund in the current year and allocated from the ongoing fund for the following fiscal year.

xxmdp, xxmde, xxmfp, and xxmfe - on demand and firm orders of media

Allocating the on-demand and discretionary funds for media follows the same logic - splitting the total amount for media either incrementally or strategically between firm and on-demand electronic and physical media.

Once all funds are allocated, some manual adjustments might be needed to make the totals balance.

III. Applying the structure to ongoing budget monitoring and reporting, as well as projecting future needs

Step 8: Using the structure to create expenditure reports and monitor current spending

Unfortunately, most current ILS' do not support faceted budget structures, and reports extracted from the system require manipulation in Excel in order to take full advantage of the power of faceted design. Figure 3 shows a partial expenditure report two months into the FY, representing all used funds per two separate cost centers. Using the fund code as a match point, we merge the standard expenditure report that the ILS produces with the excel sheet listing all funds in the schema with each of their four attributes in separate columns, which allows then for resorting by any of the facets, as well as for powerful pivot table or pivot chart reporting (Figs. 4-6).

Cost center	Material type	Acquisition mode	Format	Fund code	Amount Budgeted	Amount Expended	Remaining Balance
Arts & Humanities	Book	Autoship	Print	ahbap	100%	0.00%	100.00%
Arts & Humanities	Book	Demand	Electronic	ahbde	100%	0.19%	99.81%
Arts & Humanities	Book	Demand	Print	ahbdp	100%	2.12%	97.88%
Arts & Humanities	Book	Firm	Electronic	ahbfe	100%	0.00%	100.00%
Arts & Humanities	Book	Firm	Print	ahbfp	100%	0.00%	100.00%
Arts & Humanities	Journal/JDB	Firm	Electronic	ahjfe	100%	0.00%	100.00%
Arts & Humanities	NonJourDB	Firm	Electronic	ahnfe	100%	-1.77%	101.77%
Arts & Humanities	Book	Ongoing	Electronic	ahboe	100%	30.30%	69.70%
Arts & Humanities	Journal/JDB	Ongoing	Electronic	ahjoe	100%	32.95%	67.05%
Arts & Humanities	Journal/JDB	Ongoing	Print	ahjop	100%	5.50%	94.50%
Arts & Humanities	NonJourDB	Ongoing	Electronic	ahnnoe	100%	50.30%	49.70%
Arts & Humanities	Book	Standing	Electronic	ahbse	100%	0.00%	100.00%
Arts & Humanities	Book	Standing	Print	ahbsp	100%	8.54%	91.46%
Special Collections	Book	Firm	Print	scbfp	100%	4.39%	95.61%
Special Collections	Journal/JDB	Ongoing	Print	scjop	100%	0.00%	100.00%
Special Collections	Book	Standing	Print	scbsp	100%	37.50%	62.50%

Figure 3. Fund balance report from faceted budget structure table

Row Labels	% of Remaining Fund Balance
⊕ Arts & Humanities	44.31%
⊕ Asian Studies	30.38%
⊕ Multiple Disciplines	50.05%
⊕ MD discretionary	75.90%
⊕ MD ongoing	10.71%
⊕ MD standing orders	84.04%
⊕ Social sciences	17.93%
⊕ SS Autoship	23.24%
⊕ SS discretionary	81.08%
⊕ SS ongoing	3.99%
⊕ SS standing orders	12.56%
⊕ Special Collections	86.62%
⊕ STEM	6.60%
⊕ Media	32.72%
Grand Total	22.45%

Figure 4. Remaining balance report pivot table

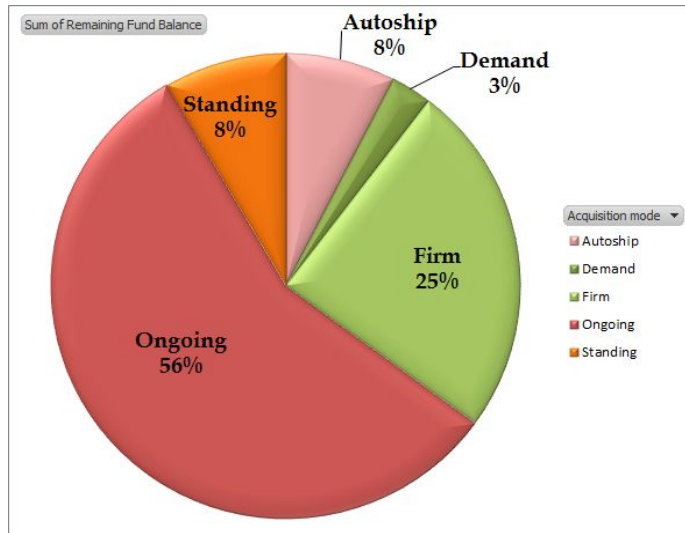


Figure 5. Acquisition mode distribution pivot chart

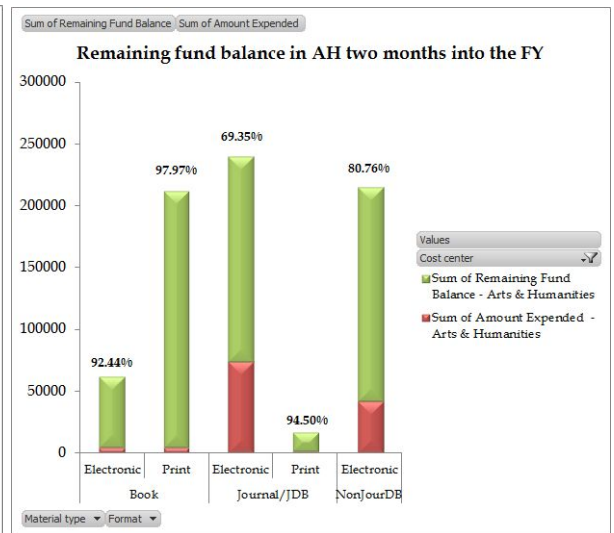


Figure 6. Remaining fund balance pivot chart

Step 9: Projecting future needs and advocating for acquisitions funding

The powerful annual reporting that is made possible by the schema allows for very detailed calculations of the actual expenditures by every possible facet combination. Figures 7 and 8 below show the percent change between expenditures in two different consecutive FYs by material type and acquisition mode (Fig. 7), and by material type and material format (Fig. 8). The dollar amounts, but not the proportions, have been altered for confidentiality.

	Sum of FY1 Expenditure	Sum of FY2 Expenditure	Percentage change
Book	\$ 1,008,873.95	\$ 1,025,286.61	1.63%
Autoship	\$ 146,890.30	\$ 187,996.80	27.98%
Demand	\$ 112,504.91	\$ 124,747.85	10.88%
Firm	\$ 491,619.38	\$ 446,709.56	-9.14%
Ongoing	\$ 63,989.70	\$ 66,971.03	4.66%
Standing	\$ 193,869.66	\$ 198,861.37	2.57%
Journal/JDB	\$ 2,752,804.01	\$ 2,900,139.59	5.35%
Firm	\$ 2,139.53	\$ 2,456.34	14.81%
Ongoing	\$ 2,750,664.48	\$ 2,897,683.25	5.34%
Media	\$ 44,774.24	\$ 43,055.00	-3.84%
Demand	\$ 19,834.30	\$ 22,744.43	14.67%
Firm	\$ 12,403.93	\$ 7,388.03	-40.44%
Ongoing	\$ 12,536.00	\$ 12,922.55	3.08%
NonJourDB	\$ 1,006,877.51	\$ 1,028,306.83	2.13%
Firm	\$ 238,035.79	\$ 236,267.90	-0.74%
Ongoing	\$ 768,841.72	\$ 792,038.93	3.02%
Grand Total	\$ 4,813,329.71	\$ 4,996,788.03	3.81%

Figure 7. Remaining fund balance pivot chart

	Sum of FY3 Expenditure	Sum of FY4 Expenditure	Percentage change
Book	\$ 643,825.11	\$ 673,939.05	4.68%
Electronic	\$ 266,050.00	\$ 284,101.60	6.79%
Print	\$ 377,775.11	\$ 389,837.45	3.19%
Journal/JDB	\$ 1,756,735.17	\$ 1,845,659.15	5.06%
Electronic	\$ 1,729,589.25	\$ 1,819,361.88	5.19%
Print	\$ 27,145.92	\$ 26,297.27	-3.13%
Media	\$ 44,774.24	\$ 27,476.07	-38.63%
Electronic	\$ 5,689.00	\$ 13,135.88	130.90%
Physical	\$ 39,085.24	\$ 14,340.19	-63.31%
NonJourDB	\$ 650,551.06	\$ 666,626.44	2.47%
Electronic	\$ 650,551.06	\$ 666,626.44	2.47%
Total	\$ 3,095,885.58	\$ 3,213,700.71	3.81%

Figure 8. Actual percent changes between

expenditure in two different consecutive FYs by
material type and material format

These data and other similar calculations allow for more sophisticated reporting and allocation options, as well.

As of year 2 after the implementation of the schema, The CCL introduced another step in the annual allocation process that is designed to strategically protect, as much as possible, the proportions of the funding allocated to particular material type/format combinations - for example, ensuring that a consistent percentage of the total budget will be spent on print books.

Here are the details of that additional step:

- Once the total budget has been divided among the cost centers, and before starting allocation by acquisition mode, we start working separately within each cost center to divide the funds among the different material type/format combinations(Fig 9).

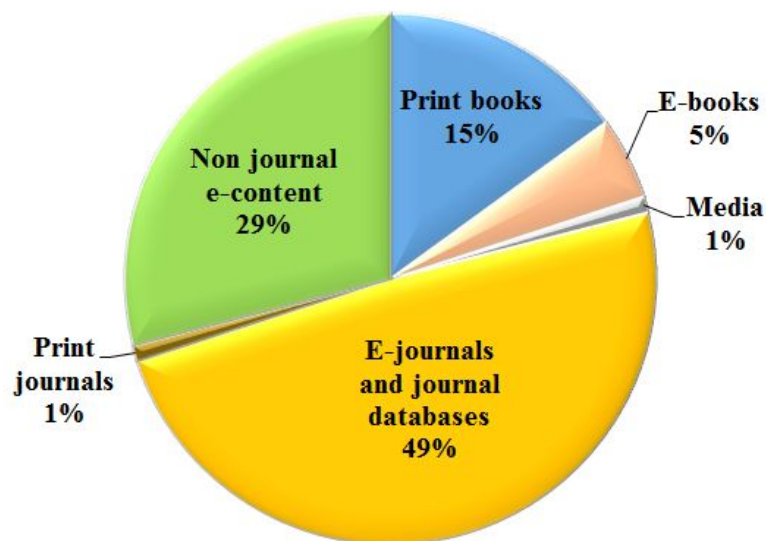


Figure 9. Division of funds by Material Type and Format within a Cost Center

- Note that these are *tentative targets* that might need to be adjusted once the allocation per acquisition mode is calculated, but it is important that they are set at this stage in order to project the desired material type and format composition for each cost center. These

targets can be incremental, based on allocation information from previous years (e.g. if we'd like to ensure we keep spending 30% of the AH budget on print books), or they can be set strategically (e.g. a decision to increase licensing of electronic media).

Incremental budgeting based on previous *allocation* for formats and material types vs. incremental budgeting based on previous *expenditures* is also likely to point to discrepancies between intentions and reality, as well as to any demonstrated need to shift funding from one material type to another, or from print toward electronic. For instance, these portions are likely to vary among cost centers. There might be different considerations regarding the split of the money by material type and format. For example, if the cost centers are based on disciplines, fund managers might target a higher percentage for journals in the sciences, while bigger chunk of the social sciences budget might go to e-books.

Another set of targets that might be useful is per subject spending within a cost center based on a broader discipline. While it is impractical to create multiple separate subject accounts within this structure, fund managers might still want to plan and monitor the distribution of the money among all appropriate LC classes within a discipline account for individual book purchases.

The next step would be allocating by *acquisition mode* as already described above, but in this case - within each material type/format combination.

Pre-setting targets for material type/format combinations also help highlight the loss of purchasing power in the parts of the budget that cover ongoing costs that are rising faster than overall budget increases. It is then possible to provide a detailed description of the negative impact of those inflation gaps on future discretionary funding. The example below is based on allocations and expenditures adapted from The CCL's budget (Table 2). Using the incremental method to allocate for non-journal content in the Social Sciences cost center means that its total appropriation will equal the total appropriation for the prior FY increased by the overall percentage increase the institution grants to the total acquisitions budget. The

year by year impact is detailed as follows.

Table 2. Allocation example from Social Sciences non-journal fund

	FY1	%-age increase	FY2	%-age increase	FY3	%-age increase	FY4
Appropriation	\$320,000.00	2.00%	\$326,400.00	2.00%	\$332,928.00	2.00%	\$339,586.56
Ongoing expenditure	\$310,000.00	3.05%	\$319,455.00 + \$650	3.05%	\$329,868.20 + \$850	3.05%	\$340,805.11
Firm expenditure	\$10,000.00		\$6,295.00		\$2,200.00		\$0.00
Proportion of discretionary funding	3.13%		1.93%		0.66%		
Balance	\$0.00		\$0.00		\$9.80		(\$1,218.55)

FY1:

Consider a total appropriation for non-journal content in the social sciences in FY1: \$320,000. Of that:

- \$310,000 was spent on ongoing resources (ssnoe)
- \$10,000 on firm orders (ssnfe) as follows:
 - One statistical dataset @ purchase price \$5,000
 - One primary source database @ purchase price \$5,000, plus an *ongoing hosting fee of \$650 per year*, starting the year after the purchase.

FY2:

FY2's appropriation for non-journal content in the social sciences will increase incrementally by the 2% overall increase the library's budget is allotted - \$326,400 (\$320,00 + 2%).

To allocate for ongoing resources in FY2, we'd need to calculate the expected ongoing cost:

- Assuming no subscriptions were cancelled or added, we'd need to increase the previous year's allocation by the average percent increase on non-journal content for our library - 3.05% (\$310,000 + 3.05% = \$319,455) and add to that any new ongoing costs - like the platform fee of \$650. That brings the needed allocation to the ongoing fund ssnoe to \$320,105.
- As a result, what is left for one-time purchases (and as a buffer against overspending) in year two is only \$6,295 (total appropriation of \$326,400 minus ongoing costs of \$320,105). The library then spends this amount on one primary source database one-time purchase with a hosting fee of \$850 to be charged as of the following year.

FY3:

If the percentage increase on the budget remains constant, the total appropriation for non-journal content in the SS will be \$332,928 (FY2 appropriation + 2%)

- The amount needed to meet ongoing commitments, would be \$330,718.20 (FY2 ongoing expenditure + 3.05% + additional ongoing cost of \$850).
- The remainder for firm orders has now shrunk to only \$2,209.80 which the library spends on a small archive with no ongoing hosting fee.

FY4:

The total appropriation for non-journal content in the SS will be \$339,586.56 (FY3 appropriation + 2%)

- The amount needed to meet ongoing commitments, would be \$340,805.11 (FY3 ongoing expenditure + 3.05%).
- That creates a deficit of \$1,218.50.

It is apparent from this simplified example that, due to the gap between inflation and funding, the proportion taken up by ongoing commitments is growing continuously while the discretionary portion is shrinking - from 3.13% in FY1 to 0.66% in FY3, even without adding new subscriptions. It is also very obvious that if the increase in the budget in FY4 is again only 2%, the library won't be able to meet its ongoing commitments without either cancellations or covering the overage from elsewhere. And that *elsewhere* can only be an area with a significant allotment of discretionary funds - like print books, for example. Sound familiar?

Table 3 provides an excellent example of the power of the proposed budget schema in budget justification. By highlighting the difference in the income increases relative to the expected inflation percentage for each acquisition mode, the causes of the library's budget shortfalls are presented in a transparent and compelling way.

Table 3. Annual budget sheet with 2% annual increase and deficit

Resource Acquisition mode	Expenditure FY#4	Annual inflation on expenditure	Annual increase on income	Expected costs FY#5	Expected income FY#5	Deficit / Surplus
E-journal subscriptions	\$6,791,252	5.40%	2.00%	\$7,157,979	\$6,927,077	(\$230,903)
Non-journal subscriptions	\$1,969,774	3.05%	2.00%	\$2,029,853	\$2,009,170	(\$20,683)
E-book subscriptions	\$383,081	8.49%	2.00%	\$415,604	\$390,742	(\$24,862)
Print journal subscriptions	\$112,746	1.00%	2.00%	\$113,874	\$115,001	\$1,127
Autoship and standing orders	\$636,725	2.00%	2.00%	\$649,459	\$649,459	\$0
Discretionary firm orders	\$1,400,000	0.00%	2.00%	\$1,400,000	\$1,428,000	\$28,000
Overall	\$11,293,578	4.19%	2.00%	\$11,766,769	\$11,519,449	(\$247,320)

Moreover, the Master Budget increase necessary to maintain purchasing power is easily calculated and when applied to the same data, it shows the projection that can balance the budget.

Table 4. Annual budget sheet with sufficient increase to balance

Resource Acquisition mode	Expenditure FY#4	Annual inflation on expenditure	Annual increase on income	Expected costs FY#5	Expected income FY#5	Deficit / Surplus
E-journal subscriptions	\$6,791,252	5.40%	4.19%	\$7,157,979	\$7,075,805	(\$82,174)
Non-journal subscriptions	\$1,969,774	3.05%	4.19%	\$2,029,853	\$2,052,308	\$22,455
E-book subscriptions	\$383,081	8.49%	4.19%	\$415,604	\$399,132	(\$16,472)
Print journal subscriptions	\$112,746	1.00%	4.19%	\$113,874	\$117,470	\$3,597
Autoship and standing orders	\$636,725	2.00%	4.19%	\$649,459	\$663,404	\$13,944
Discretionary firm orders	\$1,400,000	0.00%	4.19%	\$1,400,000	\$1,458,660	\$58,660
Overall	\$11,293,578	4.19%	4.19%	\$11,766,769	\$11,766,779	\$10